

Student: _____
Date: _____
Time: _____

Instructor: Dave Medd
Course: Math 269 - Fall 2010
Book: Triola/Goodman/Law/LaBute:
Elementary Statistics, 3ce

Assignment: Homework 1 - What is
statistics?/Intro

1. Determine whether the value is from a discrete or continuous data set.

Number of bacteria in a petri dish is 12,120

Is the value from a discrete or continuous data set?

- ☐ Continuous
☐ Discrete

2. Determine whether the value given below is from a discrete or continuous data set.

In an election poll, Nate received 17,220,624 votes.

Choose the correct answer below.

- ☐ A. A continuous data set because the possible values can be counted
☐ B. A continuous data set because there are infinitely many possible values
☐ C. A discrete data set because the possible values can be counted
☐ D. A discrete data set because there are infinitely many possible values

3. Determine whether the given value is a statistic or a parameter.

In a study of all 2097 seniors at a college, it is found that 50% own a television.

Choose the correct statement below.

- ☐ Statistic because the value is a numerical measurement describing a characteristic of a population.
☐ Parameter because the value is a numerical measurement describing a characteristic of a population.
☐ Statistic because the value is a numerical measurement describing a characteristic of a sample.
☐ Parameter because the value is a numerical measurement describing a characteristic of a sample.

4. A particular country has 45 total states. If the areas of 35 states are added and the sum is divided by 35, the result is 207,923 square kilometers. Determine whether this result is a statistic or a parameter.

Choose the correct answer below.

- ☐ A. The result is a statistic because it describes some characteristic of a population.
☐ B. The result is a parameter because it describes some characteristic of a population.
☐ C. The result is a parameter because it describes some characteristic of a sample.
☐ D. The result is a statistic because it describes some characteristic of a sample.

Student: _____
Date: _____
Time: _____

Instructor: Dave Medd
Course: Math 269 - Fall 2010
Book: Triola/Goodman/Law/LaBute:
Elementary Statistics, 3ce

Assignment: Homework 1 - What is
statistics?/Intro

5. Determine which of the four levels of measurement (nominal, ordinal, interval, ratio) is most appropriate.

Ages of children: 5, 6, 7, 8, and 9

Choose the correct answer below.

- ☐ Ordinal
- ☐ Ratio
- ☐ Nominal
- ☐ Interval

6. Determine which of the four levels of measurement (nominal, ordinal, interval, ratio) is most appropriate.

Types of movies (drama, comedy, adventure, documentary, etc.)

Choose the correct answer below.

- ☐ A. The nominal level of measurement is most appropriate because data cannot be arranged in an ordering scheme.
- ☐ B. The ordinal level of measurement is most appropriate because categories are ordered, but differences cannot be found or are meaningless.
- ☐ C. The ratio level of measurement is most appropriate because ratios are meaningful, and there is also a natural zero.
- ☐ D. The interval level of measurement is most appropriate because differences are meaningful, but there is no natural zero.

7. Determine which of the four levels of measurement (nominal, ordinal, interval, ratio) is most appropriate.

Favorite films

Choose the correct level of measurement.

- ☐ A. Interval
- ☐ B. Ratio
- ☐ C. Ordinal
- ☐ D. Nominal

Student: _____
Date: _____
Time: _____

Instructor: Dave Medd
Course: Math 269 - Fall 2010
Book: Triola/Goodman/Law/LaBute:
Elementary Statistics, 3ce

Assignment: Homework 1 - What is
statistics?/Intro

8. An author wrote a book about the benefits of home schooling. His conclusions were based on 5,133 replies received after mailing 106,911 questionnaires.

Are his conclusions likely to be valid in the sense that they can be applied to the general population? Why or why not?

Choose the correct answer below.

- ☐ A. No, the questions used were probably loaded questions.
- ☐ B. No, it was a self-selected sample.
- ☐ C. Yes, the numbers were precise.

9. In a mail-in poll, 185,000 respondents each mailed in a post card with the answers to a question about an economic stimulus package for seniors. The results showed that 67% of those who responded were in favor of an economic stimulus package for seniors. Interpret the results by identifying what we can conclude about the way the general population feels about an economic stimulus package for seniors.

What can we conclude?

- ☐ A. The sample suggests that 67% of the general public are in favor of an economic stimulus package for seniors because it is a voluntary response sample.
- ☐ B. The sample suggests that more than 67% of the general public are in favor of an economic stimulus package for seniors because it is a random sample.
- ☐ C. The sample cannot be used to conclude anything about the general population (general public) because it is a voluntary response sample.
- ☐ D. The sample suggests that 67% of the general public are in favor of an economic stimulus package for seniors because it is a random sample.

10. **a.** In a poll, 11% of 763 surveyed adults said that rising gas prices are "very harmful". What is the actual number of adults who said that rising gas prices are "very harmful"?

b. Among the 763 surveyed adults, 261 said that rising gas prices are "not at all harmful". What is the percentage of people who chose "not at all harmful"?

a. What is the actual number of adults who said that rising gas prices are "very harmful"?

(Round to the nearest integer as needed.)

b. What is the percentage of people who chose "not at all harmful"?

% (Round to the nearest tenth as needed.)

Student: _____
Date: _____
Time: _____

Instructor: Dave Medd
Course: Math 269 - Fall 2010
Book: Triola/Goodman/Law/LaBute:
Elementary Statistics, 3ce

Assignment: Homework 1 - What is
statistics?/Intro

11. An online polling site posed this question: "How much stock do you put in long-range weather forecasts?" Among its Web site users, 38,787 chose to respond. Complete parts (a) through (c) below.

a. Among the responses received, 5% answered with "a lot." What is the actual number of responses consisting of "a lot"?

(Round to the nearest integer as needed.)

b. Among the responses received, 18,941 consisted of "very little or none." What percentage of responses consisted of "very little or none"?

% (Round to the nearest integer as needed.)

c. Because the sample size of 38,787 is so large, can we conclude that about 5% of the general population puts "a lot" of stock in long-range weather forecasts? Why or why not?

- ☐ A. Yes, because the sample is so large, the margin of error is negligible.
- ☐ B. No, because the sample is a voluntary response sample, so the sample is not likely to be representative of the population.
- ☐ C. No, because even though the sample size is so large, there is still a margin of error.
- ☐ D. Yes, because the sample size is large enough so that the sample is representative of the population.

12. A statistical abstract includes the average per capita income for each of 45 states. When those 45 values are added, then divided by 45, the result is \$29,288.04. Is \$29,288.04 the average per capita income for all individuals in the 45 states? Why or why not?

Choose the correct answer below.

- ☐ A. Yes, because everyone in the population is taken into account.
- ☐ B. Yes, because the calculated value is an average of each state average.
- ☐ C. No, because not all states are taken into account.
- ☐ D. No, because population sizes are not taken into account.

Student: _____
Date: _____
Time: _____

Instructor: Dave Medd
Course: Math 269 - Fall 2010
Book: Triola/Goodman/Law/LaBute:
Elementary Statistics, 3ce

Assignment: Homework 1 - What is
statistics?/Intro

13. A researcher was once criticized for falsifying data. Among his data were figures obtained from 4 groups of rats, with 20 individual rats in each group. These values were given for the percentage of successes in each group: 53%, 58%, 63%, 46% . What's wrong with those values?

Choose the correct answer below.

- ☐ A. All percentages of success should be multiples of 4. The given percentages cannot be correct.
- ☐ B. All percentages of success should be multiples of 5. The given percentages cannot be correct.
- ☐ C. All percentages of success should be multiples of 40. The given percentages cannot be correct.
- ☐ D. All percentages of success should be multiples of 20. The given percentages cannot be correct.

14. An ad for a device used to discourage car thefts stated that "This device reduces your odds of car theft by 300 percent." What is wrong with this statement?

Choose the correct answer below.

- ☐ A. If the device eliminated all car thefts, it would reduce odds of car theft by 100%, so the 300% figure is misleading.
- ☐ B. The actual amount of the decrease in car thefts is less than 100%.
- ☐ C. If car thefts fell by 100%, it would be cut in half. Thus, a decrease of 200% means that it would be totally eliminated, and a decrease of more than 200% is impossible.
- ☐ D. The statement does not mention the initial amount of car thefts.

Student: _____
Date: _____
Time: _____

Instructor: Dave Medd
Course: Math 269 - Fall 2010
Book: Triola/Goodman/Law/LaBute:
Elementary Statistics, 3ce

Assignment: Homework 1 - What is
statistics?/Intro

1. the second choice

2. C

3. the second choice

4. D

5. the second choice

6. A

7. D

8. B

9. C

10. 84
34.2

11. 1939
49
B

12. D

13. B

14. A
